

# Recently Certified Athletic Trainers' Undergraduate Educational Preparation in Psychosocial Intervention and Referral

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**Context:** “Psychosocial Intervention and Referral” is one of the 12 content areas established by the National Athletic Trainers' Association Education Council and is required to be taught in athletic training education programs (ATEPs). The perceived preparation of athletic trainers (ATs) in this content area has not been evaluated.

**Objective:** To explore the preparation level of recently certified ATs within the content area of “Psychosocial Intervention and Referral.”

**Design:** Qualitative design involving semistructured, in-depth, focus group interviews.

**Setting:** Interviews were conducted at 2 National Collegiate Athletic Association Division I institutions in 2 regions of the United States.

**Patients or Other Participants:** A total of 11 recently certified ATs who met predetermined criteria were recruited. The ATs represented a range of undergraduate ATEPs and current employment settings.

**Data Collection and Analysis:** Focus group interviews were transcribed verbatim and analyzed deductively. Peer debriefing and member checks were used to ensure trustworthiness.

**Results:** The ATEPs are doing an adequate job of preparing ATs for many common communication and interpersonal issues, but ATs report being underprepared to deal with athlete-related issues in the areas of motivation and adherence, counseling and social support, mental skills training, and psychosocial referral.

**Conclusions:** Limitations of undergraduate ATEPs regarding preparation of athletic training students within the “Psychosocial Intervention and Referral” content area were identified, with the goal of improving athletic training education. The more we know about the issues that entry-level ATs face, the more effectively we can structure athletic training education.

**Key Words:** competencies, proficiencies, qualitative research

## Key Points

- Recently certified athletic trainers reported being less proficient at handling communication and interpersonal issues with coaches and parents, at inspiring undermotivated and noncompliant athletes, and at recognizing and addressing psychosocial issues with athletes.
- Athletic training education programs had provided these athletic trainers with little information regarding counseling and social support, mental skills training, and psychosocial support.

In 2004, the National Athletic Trainers' Association eliminated the internship route to athletic training certification and required that all athletic training students enroll in accredited athletic training education programs (ATEPs) in order to be eligible to sit for the Board of Certification national examination. The ATEPs are required to implement educational competencies and proficiencies established by the Education Council and the Professional Education Committee, which have been in place since 1999. Twelve content areas have been established in which athletic training students (ATs) must demonstrate educational competency and clinical proficiency. “Psychosocial Intervention and Referral” is one of these 12 content areas, emphasizing communication skills, motivation and adherence strategies, social support and basic counseling skills (eg, emotional response to injury), mental skills training (eg, imagery, relaxation), and potential referral situations.

Studies of certified athletic trainers (ATs) and injured athletes have suggested rehabilitation adherence and motivation strategies<sup>1,2</sup>; however, we found no authors

who have evaluated ATs' educational preparation in these content areas. Researchers also have demonstrated the important benefits of AT-provided social support<sup>3–5</sup> (including promoting rehabilitation adherence<sup>1</sup>), as well as the important counseling role ATs fulfill.<sup>6,7</sup> One group<sup>6</sup> evaluated ATs' perceived educational preparation in the area of counseling and found that most were underprepared to handle many typical counseling situations. Other authors<sup>8–10</sup> have investigated the perceived importance of, and the need and desire for knowledge in, psychological techniques and interpersonal skills that ATs have been advised to use with injured athletes. Professionals both need and desire more formal education in the use of short-term goals, promoting positive self-thoughts, creating variety in rehabilitation exercises, and encouraging effective communication skills.

The implementation of standardized competencies within ATEPs has drastically changed the face of athletic training education, and these new competency-based educational programs may better prepare and educate

ATs. The ATEPs focus on teaching and evaluating the education competencies and clinical proficiencies enforced by the Commission on Accreditation of Athletic Training Education. It is important to know whether the competencies related to the “Psychosocial Intervention and Referral” content area cover the issues that are practically important for recently certified ATs. Because the perceived preparation of ATs in this content area has not been evaluated, our study was designed to assess the relevant interpersonal and psychological issues faced by newly credentialed ATs and to explore whether ATEPs are placing adequate emphasis on the “Psychosocial Intervention and Referral” content area. The purpose of our study was to explore recently certified ATs’ opinions of how well their undergraduate ATEPs prepared them to handle a wide range of topic areas related to that content area.

## METHODS

To date, no researchers have investigated recently certified ATs’ perceptions of their undergraduate ATEP preparation in the “Psychosocial Intervention and Referral” content area. Because our study required an in-depth look at ATs’ experiences, we chose to explore this question using a mixed-methods design, with an emphasis on qualitative methods. In qualitative research, the protection of participants’ anonymity is essential to guaranteeing the authenticity of results. To ensure anonymity and to guard against the social desirability effect, ATs were told that confidentiality would be maintained and that they would not be referred to by name or with any identifying information. Confidentiality was protected by eliminating names, undergraduate institutions, and current employers from all responses. Participants were informed that the researchers would be the only people to hear the audiotapes of the interviews and to read the transcripts. In addition, ATs were assured that no individual at their current employment location would hear the audiotapes or read the transcripts. All interviews were conducted by the same individual, an AT trained in qualitative data collection techniques with a background in sport psychology.

A sample size of  $10 \pm 5$  has been reported<sup>11</sup> to provide enough participants for the range of responses needed to explore a new area, yet it is considered a realistic number for conducting and analyzing interviews. We chose to recruit a small sample size due to the exploratory nature of this study. An initial step in conducting a widescale evaluation of ATs’ academic preparation within the “Psychosocial Intervention and Referral” content area was to conduct a small-scale needs assessment. Additionally, we hoped that this study would help generate items to be included in subsequent large-scale survey research into this topic. Participants were eligible for inclusion in this study if they had been certified between 6 months and 6 years and had graduated from an accredited undergraduate ATEP (defined as the ATEP the participant attended as an undergraduate athletic training student). Initial contact with all eligible participants from each institution occurred through e-mail. Purposes and procedures of the study were explained, and ATs were asked to become involved. Approval of the institutional review board was obtained before the study began, and all participants signed an informed consent form.

**Table 1. Athletic Trainers’ Demographics**

Characteristic	No.
Mean years certified	2.7
Sex	
Male	3
Female	8
Education	
Bachelor’s degree	7
Master’s degree	4
Geographic region	
East Coast	4
West Coast	1
Midwest	6
National Collegiate Athletic Association division	
IA	5
IAA	1
II	2
III	3
Current employment setting	
College/university	
Full-time assistant athletic trainer	3
Intern athletic trainer	2
Graduate assistant athletic trainer	4
High school	
Graduate assistant athletic trainer	2

## Participants

Focus group interviews were conducted with 11 recently certified ATs. Because of the in-depth and time-intensive nature of the focus group interviews, we chose to recruit a convenience sample of ATs from 2 institutions: 1 large National Collegiate Athletic Association Division I midwestern university with undergraduate, master’s, and doctoral ATEPs and 1 small Division I New England college. The ATs at these 2 institutions had graduated from undergraduate ATEPs in 3 regions of the country, thereby representing a variety of undergraduate ATEPs. Participants ranged in age from 23 to 28 years and had been certified for an average of 2.7 years (Table 1). Each participant was involved in 1 focus group; focus group 1 had 5 participants, and focus groups 2 and 3 each had 3 participants.

## Data Collection

We used semistructured focus group interviews to facilitate comparisons across ATs and to assist in the data analysis procedures. This technique allowed for more structured comparisons among experiences of ATs from different ATEPs. A list of core questions was developed to direct the interview, but divergence from the interview guide was expected, because the ATs’ responses directed the interviews. Probes were used to gain clarity or further insight into what the ATs were saying. At the end of each category of interview questions, the ATs were asked to rank the level to which their undergraduate ATEPs prepared them to handle each set of issues (scale = 1 to 10, with 1 being *completely unprepared* and 10 being *completely prepared*). Each interview included several key open-ended questions, including the following:

1. What types of communication practice or training did you receive from your undergraduate ATEP?

2. What type of training did you receive from your undergraduate ATEP regarding strategies to keep athletes motivated during rehabilitation?
3. What types of strategies did you learn from your undergraduate ATEP to maintain or ensure athlete adherence with rehabilitation programs?
4. What type of education did you receive from your undergraduate ATEP regarding stress management, relaxation, visualization/imagery?
5. What type of training did you receive from your undergraduate ATEP concerning recognizing, intervening, and referring for various psychosocial issues?

Interviews began by gathering basic demographic data, including number of years since certification, current employment position and responsibilities, and characteristics of the undergraduate ATEP (eg, structure of the ATEP, including ATS rotations, sport assignment requirements, nontraditional setting opportunities). The conversation then was shifted to specific, individual experiences centering on the ATs' educational preparation and professional experiences. For each topic area, the ATs were asked to rank how well the undergraduate ATEP prepared them to handle relevant issues within the topic area (eg, "Knowing what you know now about issues that you were likely to face once becoming certified, how well did your undergraduate ATEP prepare you to handle these issues?").

Interviews ranged in length from 70 to 100 minutes; all were conducted by the same individual, who was trained in qualitative data collection techniques. Participants gave written and verbal consent to tape-record the interviews. Each focus group interview was conducted face-to-face in a confidential location (the investigator's office at the midwestern university and in the athletic training room after hours at the New England college) and was audiotaped for later transcription.

## Data Analysis

We used deductive content analysis to analyze the emerging themes from the raw data. Data were analyzed in a manner consistent with the Patton strategy,<sup>12</sup> which advises identifying like concepts and placing them into categories based on content and relevance to the research questions. Audiotapes were transcribed verbatim, and the researcher read all of the transcripts to become familiar with the content. To determine if saturation was reached, the investigator precoded the transcripts by summarizing the main ideas of each quotation with a short phrase in the margin. The purpose of the precoding was to identify whether or not new information was still being generated by the interviews. It was the opinion of the researcher and 2 external investigators that saturation was reached at the completion of the third focus group. Once all of the interviews were complete, data were organized by coding each individual raw data quote with a 1-word or 2-word description, forming a meaning unit. Axial and selective coding procedures were then used, which involved categorizing meaning units according to their similarities and organizing these categories within the research questions under investigation. By identifying themes throughout each transcript, we were able to gain more insight into specific

perceptions of the participants. The themes that emerged from the data were related back to the research questions of the study.

## Trustworthiness

In order to strengthen validity and establish trustworthiness of the data collection and analysis, we used peer debriefing and member checks. Transcripts were provided to another independent researcher for coding. This researcher was a doctoral student with formal education in qualitative methods (4 qualitative research methodology courses at the graduate level). After the 2 independent codings were completed, the first author met with the second independent researcher to discuss the different observations and themes that were emerging from the interviews. Themes were reviewed for relevance and consistency. This process of peer debriefing enhances the credibility of the analysis and enables researchers to distance themselves from the accounts of the participants.<sup>13</sup> Member checks were completed by asking 3 randomly selected participants to review transcripts and make optional comments on the coded themes. The 2 participants who responded indicated no misrepresentation of their statements and agreed with the coded themes. Results also were explained to 3 other participants, who agreed that the themes were consistent with the focus group responses.

## RESULTS

The ATs participating in our study were asked to discuss what types of preparation they received from their undergraduate ATEPs relative to the content area of "Psychological Intervention and Referral." Specifically, we asked about preparation related to the topic areas of communication, athlete motivation and adherence, social support and counseling, mental skills training (eg, relaxation, imagery), and psychosocial referral. The ATs then were asked to discuss various issues or situations they had experienced since being certified and to rank how well their undergraduate ATEP prepared them for each set of issues they had faced. The results from the deductive analysis procedures have been summarized for all ATs, and the average ranking and rationale are presented separately for each topic area.

## Communication

Focus group conversations related to communication skills addressed communication with coaches, physicians, and parents. On all issues related to communication, the average ranking for undergraduate preparation was 6.7 (range, 2.0–8.5). Preparation related specifically to communicating with physicians averaged 6.7 (range, 4.0–8.5); to communicating with coaches, 6.1 (range, 4.5–8.0); and to communicating with parents, 4.3 (range, 2.0–7.0). Those ATs who ranked their preparation highly recalled that their ATEPs transitioned ATs in their interactions with coaches until they could handle all coach communications, injury reports, and follow-ups with athletes by the time they were third-year (senior-level) ATs. Looking back, these ATs recognized that this was the way their ATEPs were preparing ATs to leave and function as capable ATs.



Two other ATs had different experiences, never recalling a single opportunity to speak one-on-one with coaches; rather, in these 2 Division I ATEPs, coach communication was the staff ATs' role. These 2 ATs ranked their undergraduate preparation in communication below the group average at 6 and 5. One AT called this lack of preparation the biggest weakness of her ATEP. As a new AT, she assumed that coaches would accept her playing decisions without question and reported being unprepared for coaches challenging her decisions. She suggested that all ATEPs provide ATs with opportunities to communicate with coaches, even if on a limited basis.

Ways in which ATs recalled their ATEPs preparing them for interactions with physicians centered on the opportunity to present athletes' cases during appointments. Two ATs who ranked their undergraduate preparation as 8 and 8.5, recalled similar experiences in which they were asked to be the liaison between the student-athlete and the physician. The ATs were expected to be knowledgeable about the injury, to present the athlete's case to the physician, and to report back to the AT or Approved Clinical Instructor. An AT who ranked her experience as a 4 had quite a different experience: She was given the opportunity to observe at on-campus physician visits but was never allowed to go off site or to present athlete cases. Another AT went so far as to say that the one thing she would change about her undergraduate experience was to have more contact with physicians. Contact with athletes' parents was another area in which the ATs reported being underprepared. Although each of the 11 ATs in our study had a rotation at a local high school during their education, none recalled any situation in which they had the opportunity to talk to parents in their roles as ATs, which may explain the average preparation ranking of 4.3. The ATs in this study recalled learning what information can and cannot be legally shared with parents but had no experiences interacting with athletes' parents until they were certified and working with their own athletes.

### Athlete Motivation and Adherence

This topic covered the widest range of issues and produced the widest range of perceptions related to ATEP preparation. Although this topic received the highest average ranking of preparation at 7.1, individual rankings ranged from 2 to 9. When asked what they had learned in their undergraduate programs about motivating athletes, many ATs commented that they had not focused much on this area, with 1 AT remarking, "Nothing; there should be a class on that." Statements by several ATs indicated that they felt they had not learned many motivational strategies from their ATEPs. At least 1 AT from each of the 3 focus groups recalled being told to set short-term goals, but few were given any strategies to do so. Goal setting was covered to various extents in all undergraduate ATEPs represented by the ATs in our study. However, only 1 of the 11 ATs recalled in-depth practice in goal setting with athletes as an ATs. Another AT who ranked his undergraduate preparation at 9 remembered having athletes write down 3 short-term and 3 long-term goals as part of their rehabilitation program. Conversely, some ATs seemed surprised at the idea that athletes should play an active role in the goal-setting process, because they

learned that ATs should establish the goals for the athletes.

Varying rehabilitation exercises and using sport-specific rehabilitation were other motivational strategies emphasized in most undergraduate ATEPs represented in our study. The ATs found through their experiences as both ATs and as recently certified professionals that implementing new exercises was an effective strategy for preventing athlete boredom during long-term rehabilitation. One AT recalled her rehabilitation class strongly emphasizing the strategy of sport specificity, requiring ATs to incorporate an aspect of the sport into each exercise. For example, football players were thrown footballs while standing on mini-trampolines, and volleyball players were required to pass while balancing. One AT who ranked her undergraduate preparation highly in motivating athletes discussed the importance of keeping athletes involved in practice as much as possible and of participating in exercises with the athlete. Although she did not learn these techniques in a classroom setting, she recalled learning by observing the positive effect of these techniques on athletes' moods. For example, a soccer athlete can run stadium stairs or a basketball player can perform wall sits, allowing the athlete to complete rehabilitation while remaining a part of the team. Another AT recalled an extensive project in her undergraduate rehabilitation class that allowed her to develop an appreciation for athletes' efforts and create her own effective motivational strategies:

We had to do what was called a rehab project where you followed 1 athlete from the time of their injury all the way through their rehab. That means you went to every doctor appointment with them and you were in charge of their rehab in the [athletic] training room. We were expected to kind of discover things on our own, then at the end we had to do a big report and that was one of the big things: how did you keep your athlete motivated? They really wanted us to figure it out on our own, to figure out that you have to keep them positive and let them know what's going to happen, what they can expect. When I was going through it I thought it was a lot of work because we had to write a big paper about the injury and the surgery. In the end, it was probably one of the best experiences I had, just because you were totally in charge. I mean, obviously somebody was supervising you, but you were in charge of this person and you got to see them from start to finish.

In terms of ensuring athlete adherence with rehabilitation programs, all ATs in our study reported being underprepared by their ATEPs. The only strategy ATs recalled learning for dealing with noncompliant athletes was going to the coach, and ATs were split on whether this strategy was effective. The ATs in 1 focus group debated this topic at length. At least 2 ATs believed that reporting athlete nonadherence to the coach was an effective solution, commenting that this was the only option available when the AT had been repeatedly disrespected by an athlete missing scheduled rehabilitation sessions. Another AT remembered learning the same strategy but disagreed with it, citing a loss of athlete trust by "tattling" to the coach.

## Psychosocial Intervention

**Counseling and Social Support.** We asked ATs in our study what type of counseling or support relationship development they had learned from their undergraduate ATEPs. Additionally, due to the recent body of literature emphasizing the importance of the social support ATs provide to injured athletes, ATs were asked what types of social support they were taught to provide. During all 3 interviews, ATs expressed the belief that each of the 8 types of social support should be provided, given an appropriate scenario. However, none of the 11 ATs in this study recalled learning anything about social support during their undergraduate education, nor were they given practical experience in developing counseling skills with injured athletes. Rather, these ATs developed an understanding of appropriate counseling and social support provision during their graduate work or through practical experience as ATs.

**Sport Psychology in the Athletic Training Room.** Four of the 11 ATs interviewed for our study had taken a sport psychology or related class as ATSS; 2 of them had taken the course as an elective. Topics that ATs covered in their required classes included emotional response to injury, stress management, relaxation, and visualization and imagery, although ATs were quick to state that each of these topics was covered at a very superficial level. No ATs in our study recalled learning about stress-response models (eg, cognitive appraisal model) to explain psychological and emotional response to injury and inactivity. Only 3 of 11 ATs reported using any of these techniques with injured athletes, with breathing control (ie, centering) being the technique used. These ATs reported using centering with athletes primarily during the initial injury situation, having the acutely injured athlete take a deep, cleansing breath to slow breathing and evoke calm. The ATs found centering to be extremely effective in these situations. We also asked the ATs if they would be open to using a wider range of sport psychology techniques, including relaxation, visualization and imagery, and cognitive techniques (eg, thought stopping, cognitive restructuring). All stated that they would be interested in learning more about the techniques and would be willing to implement techniques if they had the requisite knowledge. Visualization and imagery were of particular interest, with all 11 ATs indicating that they would be open to using this technique with injured athletes if they knew more about it.

## Psychosocial Referral

The ATs in our study were split on how well their ATEPs prepared them for dealing with psychosocial issues potentially requiring referral, such as eating disorders, emotional issues, and psychological issues (eg, depression). The group average for this topic was 3.7, with individual ratings ranging from 2 to 7. Those who felt most prepared to handle referral situations discussed how their ATEPs took time to simulate possible scenarios. One AT remembered referral situations being simulated through case studies; the ATSS managed a case, from initially approaching the athlete to completing the referral process. This AT was in the minority, however, with most of the ATs in our study feeling underprepared by their ATEPs to handle potential referral situations. As a result, these ATs

indicated that they were less confident in their ability to handle referral situations in their current roles as ATs and Approved Clinical Instructors. Three ATs recalled specifically that their ATEPs had justified this lack of preparation by claiming that potential referral situations were uncommon for ATs. One participant noted:

Everybody just kind of touched on it and said that you won't have to deal with it very much, when in actuality you don't know if you're going to deal with it once or every day. I mean, if you end up at a Division I school they're going to have somebody that you can send them [the athletes] to, but at small schools and high schools it's going to be just you dealing with it and I don't think they are preparing us to deal with that.

The general consensus of the ATs was that they felt comfortable knowing when to refer but did not feel prepared to approach the athlete to suggest a referral. For all 11 ATs, athlete referral situations during their undergraduate education were handled solely by staff ATs. Although ATs understood that confidentiality issues might prevent ATSS from being involved in decision-making and intervention processes with athletes, they stressed the importance of ATEPs finding some way to prepare ATSS to handle referral situations that they would inevitably experience as ATs. According to our study participants, ATEPs that do not at least simulate such situations are inadequately preparing ATSS for situations they will experience as ATs.

## DISCUSSION

Average rankings on the majority of topics and subtopics discussed in this study indicate that many ATEPs are doing an excellent job of preparing ATs in the areas of communication and athlete motivation. However, our results imply that ATEPs may need to focus more on issues related to communication with parents and strength and conditioning staff. In terms of dealing with injured athletes, ATs expressed concern with the lack of strategies they had been given for dealing with noncompliant and difficult athletes. Additionally, ATs in this study reported being underprepared in terms of providing counseling support to athletes, mental skills training (eg, relaxation, centering, visualization and imagery), and knowing when and how to refer for psychological issues.

## Communication

The Education Council's *Competency Matrix*, 3rd edition, emphasizes the development of skills in interpersonal communication among ATs, their patients, and others involved in the health care of the patient (eg, parents, strength and conditioning staff, physicians) within cognitive, affective, and psychomotor domains.<sup>14</sup> Our ATs stated they felt best prepared by ATEPs that provided them with opportunities to create injury reports, communicate with coaches, attend physician appointments, present athlete cases, and report back to their supervising Approved Clinical Instructor. None of the 11 ATs in our study had any opportunities as ATSS to practice or develop communication skills with strength and conditioning coaches, and this lack of preparation became evident once

**Table 2. Sample Competencies From the Education Council's *Competency Matrix*, 3rd Edition<sup>a</sup>**

Domain	Area	Competency
Cognitive	Sport psychology	Describe the basic principles of mental preparation, relaxation and visualization techniques, general personality traits, associated trait anxiety, locus of control, and athlete and social environment interactions. (PS-C4)
Psychomotor	Intervention and referral	Intervenes, when appropriate, with an individual with a suspected substance abuse problem. (PS-P1)
Affective	Motivation	Demonstrate the ability to select and integrate appropriate motivational techniques into a patient's treatment or rehabilitation program. This includes, but is not limited to, verbal motivation, visualization, imagery, and/or desensitization. (PS-CP2)

<sup>a</sup> Reprinted with permission of the National Athletic Trainers' Association Education Council.<sup>14</sup>

they obtained certification. Because of the important role strength and conditioning coaches now play within athletics, it would be helpful for ATEPs to allow ATs to practice communicating with strength coaches or to simulate these interactions at smaller institutions that do not have strength and conditioning programs. No ATs recalled any situation in which they had the opportunity to talk to parents in their role as ATs, which may explain the average preparation ranking of 4.3. Although all of our ATs had a rotation at a high school as part of their ATEP experience, they recalled the high school AT handling all communication with athletes' parents. Competencies require that ATEPs provide ATs with experience in communicating health care information to parents and guardians regarding the psychological and emotional well-being of the patient (PS-C5)<sup>14</sup>; however, the ATs in our study denied receiving any training in this area or having any opportunity to communicate with parents on any issue.

Communication should be embedded in a global patient-oriented curriculum, because communication skills are viewed as core elements of good medicine.<sup>15</sup> Evidence in the medical field suggests that good doctor-patient communication is related to better outcomes, better adherence, and greater satisfaction of both doctor and patient.<sup>16,17</sup> As communication skills have become more important in medical practice, universities have begun to implement curricula in communication. In one university's curriculum, communication training in "real-life" settings is provided every year, beginning with simple, basic skills and progressing to medical communication, consultation, and contextual situations with specific groups of patients.<sup>15</sup> Skills are taught through small group training, focusing on role play and patient simulations, with extra training being provided for students who perform poorly. Embedding communication training within the curriculum in this manner leads to early detection of students with poor communication skills and to better acquisition of skills.<sup>15</sup>

### Athlete Motivation and Adherence

Topics related to motivation accounted for 5 "Psychosocial Intervention and Referral" competencies delineated in the *Competency Matrix*, 3rd edition (PS-C2, PS-C25, PS-P1, PS-P4, PS-CP2).<sup>14</sup> A sample of competencies from the *Matrix* is included in Table 2. Although ATs reported the highest level of preparation in this topic area, the range of responses was also widest, with many ATs feeling underprepared. The ATs who felt most prepared recalled learning a variety of strategies, such as allowing athletes to play an active role in rehabilitation through goal setting, varying rehabilitation exercises, making rehabil-

itation more sport specific, keeping the athlete involved in practice, and AT participation in rehabilitation. These findings are consistent with findings from a previous study (J.L.S. and D. R. Gould, unpublished data, 2006) of injured athletes. In particular, these athletes reported that AT participation in rehabilitation allowed their competitive spirit to come out, and it was cited as the favorite strategy of athletes in this study. The most common motivational strategy that ATs reported learning from their undergraduate ATEPs was goal setting, yet most ATs used only informal goal setting with their athletes. All ATs in our study discussed learning goal setting to some extent, but most could not recall many of the primary components of effective goal setting (specific, measurable, attainable, realistic, timely) and reported receiving no training on how to deal with failure to achieve goals. The lack of formal goal setting reported by participants in our study is consistent with athletes' reports of goal setting being underused in the athletic training room and not encompassing all components of effective goal setting (J.L.S.-O. and D. R. Gould, unpublished data, 2006). The majority of ATs in our study stated that ATs should be the sole goal setters, but this finding is in direct opposition to previous research (J.L.S. and D. R. Gould, unpublished data, 2006) on injured athletes, which indicated that goal setting works better when athletes play an active role and is less effective when ATs set goals that are not meaningful to athletes.

Athletes in previous studies have reported a desire for more strategies to ensure their adherence in rehabilitation; however, ATs might not have learned adherence strategies during their ATEPs, which would explain the lack. The ATs in our study were split over the effectiveness of reporting problems to the coach. Several ATs complained that they had little preparation or training in adherence and motivation strategies during their undergraduate ATEPs and suggested that more formal education in these areas was needed. Despite the average ranking of 7.1, several ATs rated their preparation extremely low (2 to 5), because they felt their undergraduate ATEPs had done little to prepare them for certain situations they had experienced since being certified. The most extensive undergraduate ATEP preparation came in the form of a rehabilitation project, which is an example of the discovery learning theory. This theory is defined as obtaining knowledge through the use of one's own mind,<sup>18</sup> which emphasizes that discovery is not a random event but one that involves problem solving through structured searching strategies. Although it may not be possible for all ATEPs to incorporate such an extensive project, this type of



discovery learning does seem to go a long way in preparing ATs for real-life situations they will experience as ATs. It might, therefore, be beneficial for all programs to informally assign ATs to shadow an athlete during a lengthy rehabilitation, with the goal of having the ATs develop strategies for keeping athletes compliant and motivated during rehabilitation.

## Psychosocial Intervention

**Counseling and Social Support.** None of the 11 ATs in this study recalled learning anything about social support during their undergraduate education, and they were not provided with practical experience in developing counseling skills with injured athletes. Rather, these ATs developed an understanding of appropriate counseling and social support provision during their graduate work or through practical experience. Basic counseling principles, such as discussion and active listening, are one of the competencies<sup>14</sup> listed in the competency matrix (PS-C9); however, ATs in our focus groups denied learning how to counsel athletes in this way or being given an opportunity to interact with athletes in such a role. Additionally, no ATs in our study recalled learning about stress-response models to explain psychological and emotional response to injury and forced inactivity, although this is explicitly stated<sup>14</sup> in PS-C2, PS-C3, PS-C22.

Previous researchers have demonstrated that athletes look increasingly toward ATs as a source of social support during the rehabilitation process<sup>5,19</sup> and that adherence to rehabilitation is related positively to the amount of social support received.<sup>1</sup> In one study,<sup>2</sup> lack of social support was the single most important predictor of adherence among injured athletes, implying that athletes may be more likely to adhere when they receive support and encouragement from their AT. Proof of a direct relationship between social support and rehabilitation adherence has not been demonstrated consistently, but reported findings provide a basis for expanding social support research to injured athletes. The lack of formal education by ATEPs in these areas may explain some of the underpreparedness in the areas of communication and motivation, as social support encompasses many relevant skills. However, the role of social support is listed as an affective domain competency in the *Competency Matrix*<sup>14</sup> and therefore should already be included in the curriculum.

**Sport Psychology in the Athletic Training Room.** It is clear that “Psychosocial Intervention and Referral” competencies relevant to emotional response to injury, stress management, relaxation, and visualization and imagery were addressed in most ATEPs represented in our study, but the ATs did not believe that their training was adequate to prepare them to use these skills and techniques in practical settings. Despite the fact that many within the field will argue that being a “sport psychologist” is not a role of ATs, these competencies are included, and it is, therefore, the responsibility of ATEPs to educate and prepare students in these areas. Topics such as emotional response to injury, stress management, relaxation, and visualization and imagery were covered only at a superficial level by ATEPs represented in this study. The competencies state that ATs should be able to describe the basic principles of

mental preparation, relaxation, and visualization techniques (PS-C4) and be able to develop and implement stress reduction and mental imagery techniques<sup>14</sup> with athletes (PS-P5, PS-P6, PS-CP2), but ATs in our study felt unprepared to do so. Many authors have demonstrated positive effects of sport psychology on performance enhancement, and researchers have demonstrated positive effects with injury rehabilitation. In particular, stress management, relaxation, self-talk, visualization and imagery, and goal setting, used alone or in combination, have all been shown to have positive effects on various aspects of the athletic injury rehabilitation process.<sup>20–26</sup> Statements by ATs in our study echo findings from 2 previous studies published in the 1990s in that ATs need and want more education in sport psychology and psychology of injury.<sup>9,10</sup> We assumed these findings were outdated; however, it seems that even accredited ATEPs may not be adequately developing ATs’ skills within these competency areas.

## Psychosocial Referral

Competence in psychosocial referral requires that ATs not only learn to recognize abnormal psychological reactions after injury but also to recognize, intervene, and refer for a wide range of psychological issues.<sup>27</sup> The ATs in our study who felt underprepared to handle referral situations thought their ATEPs excluded them from situations with athletes involving psychological issues or potential need for referral. Conversely, ATs who felt most prepared came from ATEPs that required practice in case studies or simulated scenarios. The *Competency Matrix*<sup>14</sup> listed multiple competencies related to handling psychosocial issues and referral situations (ie, PS-C11, PS-C12, PS-C14, PS-C15, PS-C17, PS-C18, PS-C20, PS-C23, PS-C24, PS-P1, PS-P3, PS-CP1). The suggestions ATs had for improving ATEPs included allowing ATs to participate in referral conversations with athletes or simulating conversations so that students felt more prepared to handle such situations as ATs. Most of the ATs in our study reported that the reason given by their ATEPs for the decreased focus on referral issues is that most ATs never deal with such issues. However, according to a 2005 study,<sup>28</sup> ATs (mean age = 32 years) had dealt with an average of 6.8 situations involving eating disorders during their careers and had referred an athlete for an eating disorder an average of 1.43 times in the last 2 years. With eating disorders representing only one potential reason for referral, it is inappropriate for ATEPs to claim lack of practicality as a justification for failing to adequately prepare ATs. Other researchers<sup>6</sup> have demonstrated through surveys that most ATs (70% to 85%) feel academically prepared to counsel and refer in the areas of injury prevention, injury rehabilitation, and nutrition, but they feel unprepared or underprepared to detect and make referrals in psychological areas such as alcohol use, drug use and abuse, relationship issues, sexual issues, suicide, family matters, racial issues, and financial issues.<sup>6,7</sup> Across all psychological areas, ATs in these studies indicated that more emphasis was needed during academic preparation.<sup>6</sup>

The ATs in our study stated they felt comfortable knowing when to refer and had learned about the warning

signs of various common psychosocial issues, but they were uncomfortable actually approaching the athlete or making the referral. This result is consistent with the results of previous survey research<sup>28</sup>: Although 77% of ATs believed that they could identify an athlete with a suspected eating disorder, only 25% believed that ATs receive enough education about eating disorders, and 78% wanted more training on how to manage athletes with eating disorders. However, because the average age of ATs in this study was  $32 \pm 7.8$  years, it is impossible to know whether this strong faith in their ability to identify problems is the result of educational preparation or years of experience as an AT. Additionally, even if we assume that educational training prepared ATs to identify and refer athletes for eating disorders through quantitative research, we cannot know what part of these ATs' educational experience was beneficial in improving their knowledge and confidence. The strength of our qualitative study is the ability to identify successful educational strategies. Comfort with referrals is certainly a skill that develops with time and experience, but ATEPs should work within the limits of athlete confidentiality to prepare ATs as best they can through case studies and scenario simulations.

## Limitations

The ATs participating in our study represented only 11 of the nearly 350 accredited ATEPs in the United States, so the experiences of these individuals may not represent the experiences of all recently certified ATs. This study was exploratory and designed to provide an initial understanding of ATs' educational preparation within the "Psychosocial Intervention and Referral" content area. Although we may not be able to generalize the experiences of these ATs to the experiences of all ATs who graduate from accredited ATEPs, this study was an important initial step toward understanding whether ATEPs are placing adequate emphasis on the development of competencies within this content area.

## CONCLUSIONS

The purpose of our study was to evaluate recently certified ATs' undergraduate ATEP preparation within the content area of "Psychosocial Intervention and Referral." In general, ATs in our study reported being less proficient at handling communication and interpersonal issues with coaches and parents, at inspiring undermotivated and noncompliant athletes, and at recognizing and addressing psychosocial issues with athletes. The ATs also had learned little, if anything, about counseling and social support, mental skills training, and psychosocial referral. Previous researchers<sup>28</sup> have demonstrated that attitudes of ATs toward these psychosocial issues can be changed after a 10-week course, and students in the course learned many of the same strategies that ATs in our study learned through experience only. We hope that ATEP directors will consider implementing more training in psychosocial strategies into the undergraduate curriculum.

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